CLAIMS

What is claimed is:

1. A method for producing soluble and active recombinant protein comprising the steps of:
   a. Inserting the p26 beta-core domain into a vector.
   b. Inserting the insoluble protein domain into the vector directly after the p26 domain.
   c. Inserting said vector into bacterial cells.
   d. Growing up the bacteria in a culture to an OD of 0.8 to 1.0
   e. Inducing said culture with IPTG

2. A method for preventing unwanted proteolysis of a recombinant protein comprising the steps of:
   a. Inserting bovine alpha-crystallin into a vector.
   b. Inserting the protein of interest into a vector.
   c. Inserting said vectors into bacterial cells.
   d. Growing up the bacteria in a culture to an OD of 0.8 to 1.0.
   e. Inducing said culture with IPTG.

3. A method for purifying native bovine alpha-crystallin protein. comprising the steps of:
   a. Homogenizing bovine eye lenses in a buffer.
   b. Binding alpha-crystallin protein to a Q column
   c. Eluting the alpha-crystallin with high salt
   d. Separating the protein in 100 mM Glycine pH 2.5 on a Macroprep ()column

4. A method for purifying recombinant alpha-crystallin type HIS-tagged proteins comprising the steps of:

a. Inserting the alpha-crystallin protein domain into a vector with the hexa-his tag.
b. Inserting said vector into bacterial cells and growing up and inducing said cells.
c. Lysing said cells and centrifuging out cell debris.
d. Purifying alpha-crystallin protein using a Ni-NTA column.

5. A method for protecting a protein from proteolysis during purification, comprising the steps of:

a. Coupling purified bovine alpha-crystallin protein to a chromatography resin.
CNBr-activated Sepharose 4B
NHS –activated Sepharose 4B
b. Rinsing and blocking said resin with BSA.
c. Using said resin to purify the protein of choice.

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